				T		·	1	T		T	
	А	В	С	D	E	F	G	<u> </u>	l	J	K
1			Appendix A: E	missions Cal	culations						Page 1 of 23 ATSD App A
2			Summa	ary of Emissio	ns						
3											
4			amnany Nama:	MCDI of India	na IIC						
4			Company Name:	MGPI OI INGIA	illa, LLC						
5			Address:	7 Ridge Aven	iue, Lawrei	nceburg,	Indiana 4	7025			
6		Part 70 Operat	ting Permit No.:	T020_32440_0	0005						
-		rait 70 Opera	_								
7			Reviewer:	Teresa Freen	nan / Kriste	n Willou	ghby				
8			Date:	May 22, 2014							
9											
10			Potential to	Emit Before	Controls (t	on\yr)					
11	Significant Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	СО	GHG	GHG	Total HAPs
12	_	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
13									10/30/2009	11/29/2013	
14	One (1) pneumatic conveyor, identified as EU-11	189.2	189.2	16.1	-	-	-	-	-	-	-
15	One (1) corn receiving and storage system, identified as	225.2	225.2	40.4	_	_	_	_	_	_	-
15	EU-12 (Stack S-111) One (1) grain transport system, identified as EU-12	225.3	225.3	19.1							
16	(Stack S-112)	20.3	20.3	1.73	-	-	-	-	-	-	-
10	(Stask 5 112)	20.0	20.0	1.70							
17	Seven (7) storage bins, collectively identified as EU-13	20.3	20.3	1.73	-	-	-	-	-	-	-
					_	_	_	_	_	_	_
18	Six (6) hammermills, collectively identified as EU-14	90.1	90.1	7.66							
10	EU-21, which consists of fourteen (14) open fermenters	-	_	-	-	_	7.8	-	-	_	0.04
19 20		20.8	20.0	2.5							
21	DDGS Storage (EU-34) DDGS Rail/Truck Loadout (EU-35/EU-36)	29.8 27.2	29.8 27.2	2.3	-	-	-	-	-	-	-
22	DDGS Rail/Truck Loadout (EU-33/EU-38)	0.27	0.27	0.05				 			
	Twenty-four (24) closed fermenters, collectively	U.L.!	0.27	0.00	_	_		_	_	_	
23	identified as EU-22	-	-	-	-	-	57.8	-	-	-	0.26
		-	_		_	_	12.5				
24	Two (2) beer wells, identified as EU-23 and EU-24	-	-	-	-	-			_	-	-
25	Distillation (EU-20 and EU-25 through EU-29)	-	-	-	-	-	0.1	-	-	-	3.43E-03
26	Four (4) paddle screens, identified as EU-31 and three	-	-	-	-	-	440.0	-	-	-	2.00
20	(3) conveyors, identified as EU-33 Five (5) rotary dryers, one (1) cooler, and one (1)										
27	transport system, collectively identified as EU-32	201.0	201.0	201.0	-	-	893.4	-	-	-	69.9
28	One (1) wine room, identified as EU-41	_	-	-	-	-	19.5	-	-	-	-
29	One (1) tank farm, identified as EU-42	-	-	-	-	-	19.0		-	-	-
30	EU-43, which consists of Building 88	20	_	-	_	_	4.7	_	-	_	w2
31	One (1) mini-tank farm, identified as EU-45	ex.		-	-	-	3.6	-			-
	One (1) barrel and emptying operation, identified	_	_	_	_	_		_	_	_	_
32	as EU-61						12.0				
22	Six (6) warehouses, identified as EU-71 through	-	_	-	-	-	1007.4	_	-	-	-
33	EU-76 One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.4	1867.4 5.76	88.0	126,497	126,479	1.98
34	One (1) steam boiler, identified as EU-97 (worst	1.55	1.90	1.90	0.03	293.4	3.70	00.0	120,497	120,479	1.90
35	case fuel)	2.85	3.28	2.21	60.8	28.5	1.12	17.2	31,930	31,926	0.39
36	One (1) loading rack, identified as EU-46	-				-	6.69			01,020	0.05
37	Subtotal Significant Emission Unit	808	815	262	61	322	3351	105	158427	158405	75
38	Fugitive Emissions	-	-	-	-	-	128.2	-	-		0.90
39	Emergency Generator-Diesel	0.280	0.160	0.160	1.62	9.60	0.28	2.20	462	462	4.41E-03
40	Emergency Generator-Natural gas	0.001	0.001	0.001	1.78E-05	0.10	0.004	0.01	4.14	4.29	2.38E-03
41	FW Pump-Diesel	0.13	0.13	0.13	0.12	1.82	0.15	0.39	67.8	67.8	1.59E-03
42	Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.5	0.43	2.60	533	534	8.38E-03
43	Total	809	815	263	63	333	3480	108	158961	158939	76
44											

	A	В	С	D	E	F	G	Н	l	J	К
45	,		Appendix A: E	missions Cal	culations				ł	·	Page 2 of 23 ATSD App A
46			Summa	ary of Emissio	ns						
47											
		_	ompany Name:	MCDI of India	na IIC						
48		C	• •		•		ا ممانمیم ا	17005			
49		David 70 Over 1994		7 Ridge Aven		nceburg,	indiana 4	1/025			
50		Part 70 Operat	ing Permit No.:								
51				Teresa Freen	nan / Kriste	en Willou	ghby				
52			Date:	May 22, 2014							
53											
54 55				to Emit After (······································	·		y		
55	Significant Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	СО	GHG	GHG	Total HAPs
56 57		(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
58	One (1) pneumatic conveyor, identified as EU-11	1.89	1.89	1 022	<u> </u>	_	T _	T	10/30/2009		
36	One (1) corn receiving and storage system, identified as	1.09	1.09	0.32	-	-	-	-	-	-	~
59	EU-12 (Stack S-111)	2.25	2.25	0.38	_	_	_	_	-	-	-
	One (1) grain transport system, identified as EU-12										
60	(Stack S-112)	0.20	0.20	0.03	-	-	-	-	-	-	-
61	Seven (7) storage bins, collectively identified as EU-13	0.20	0.20	0.03	-	-	-	-	-	_	-
62	Six (6) hammermills, collectively identified as EU-14	0.90	0.90	0.15	_	_	_	_	_	_	_
		0.00	1 0.00	0.10							1
63	EU-21, which consists of fourteen (14) open fermenters	-	_	-	-	-	7.8	-	-	-	0.04
64	DDGS Storage (EU-34)	0.30	0.30	0.05	-	-	-	-	-	-	~
65	DDGS Rail/Truck Loadout (EU-35/EU-36)	0.27	0.27	0.05	-	-	-	-	-	-	
66	DDGS Rail/Truck Loader(EU-37/EU-38)	0.27	0.27	0.05	~	-	-	-	-	-	*
67	Twenty-four (24) closed fermenters, collectively						57.0				0.00
67	identified as EU-22	-	-	-	-	-	57.8	-	-	-	0.26
68	Two (2) beer wells, identified as EU-23 and EU-24	_	_	_	_	_	12.5			_	
69	Distillation (EU-20 and EU-25 through EU-29)	_	-	-	-	-	0.1	-	-	-	3.43E-03
	Four (4) paddle screens, identified as EU-31 and three										
70	(3) conveyors, identified as EU-33	_	-	-	-	-	440.0	-	-	-	2.00
7.	Five (5) rotary dryers, one (1) cooler, and one (1)	00.0	000				000.4				00.0
71 72	transport system, collectively identified as EU-32 One (1) wine room, identified as EU-41	30.2	30.2	30.2	-	-	893.4 19.5	-	-	-	69.9
73	One (1) tank farm, identified as EU-41		-	-	-	-	19.5	-	_	-	-
74	EU-43, which consists of Building 88						4.69		_	~	-
75	One (1) mini-tank farm, identified as EU-45					_	3.59	_	-	_	=
<u></u>	One (1) barrel and emptying operation, identified						0.00				
76	as EU-61	-	-	-	-	-	12.0	-	-	-	-
	Six (6) warehouses, identified as EU-71 through										
77	EU-76	=	-	-	-	-	1867	-	-	-	-
78	One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.4	5.76	88.0	126,497	126,479	1.98
	One (1) steam boiler, identified as EU-97 (worst					00.55		4==		0.4 0.5	
79 80	case fuel)	2.85	3.28	2.21	60.8	28.53	1.12	17.2	31,930	31,926	0.39
80	One (1) loading rack, identified as EU-46	<u>-</u> 41	- 40	- 44	- 61	222	6.69	105	450 407	158,405	0.05 75
82	Subtotal Significant Emission Unit Fugitive Emissions	41	48	41	61	322	3,351 128.2	105	158,427	100,400	0.90
83	Emergency Generator-Diesel	0.28	0.16	0.16	1.62	9.60	0.28	2.20	462	462	4.41E-03
84	Emergency Generator-Natural gas	0.001	0.001	0.001	0.000	0.096	0.004	0.012	4.14	4.29	2.38E-03
85	FW Pump-Diesel	0.13	0.13	0.13	0.000	1.82	0.004	0.39	67.8	67.8	1.59E-03
86	Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.52	0.43	2.60	533	534	8.38E-03
87	Total	42	48	42	63	333	3,480	108	158,961	158,939	76
88									······································	······································	

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89	^		Appendix A: E	<u> </u>		<u> </u>	<u> </u>	1 11	<u> </u>	J	Page 3 of 23 ATSD App A
90				ary of Emissio							rago o or zovir oz vipp vi
91				•							
-		_									
92		C	ompany Name:		•						
93				7 Ridge Aven		nceburg,	Indiana 4	7025			
94		Part 70 Operati	ing Permit No.:	T029-32119-0	0005						
95			Reviewer:	Teresa Freen	nan / Kriste	en Willou	ghby				
96			Date:	May 22, 2014							
97											
98			ial to Emit After								
99	Significant Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHG	GHG	Total HAPs
100		(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)	(tons/yr)
101 102	One (1) pneumatic conveyor, identified as EU-11	189.2	189.2	16.1	T	T		l	10/30/2009	11/29/2013	
102	One (1) corn receiving and storage system, identified as	109.2	109.2	10.1	-	-	-	-	~	~	-
103	EU-12 (Stack S-111)	5.26	5.26	5.26	_	_	-	_	-	-	_
	One (1) grain transport system, identified as EU-12										
104	(Stack S-112)	0.96	0.96	0.96		-	-	-		=	-
100		0.00									
105	Seven (7) storage bins, collectively identified as EU-13	0.20	0.20	0.03	-	-	-	-	-	-	-
106	Six (6) hammermills, collectively identified as EU-14	90.1	90.1	7.66	_	_	_	_	_	_	_
100	Oix (0) Hammermine, concentrally identified as EO 14	00.1	1 00.1	7.00							
107	EU-21, which consists of fourteen (14) open fermenters	-	-	_	-	_	7.8	-	_	_	0.04
108	DDGS Storage (EU-34)	0.60	0.60	0.60	-	-	-	-	-	-	-
109	DDGS Rail/Truck Loadout (EU-35/EU-36)	1.27	1.27	1.27	-	-	-		-	-	-
110	DDGS Rail/Truck Loader(EU-37/EU-38)	5.48	5.48	5.48	-	-	~	-	-	-	-
111	Twenty-four (24) closed fermenters, collectively						57.0				0.00
111	identified as EU-22	-	-	-	-	-	57.8	-	-	-	0.26
112	Two (2) beer wells, identified as EU-23 and EU-24	<u>-</u>	_	_	_	_	12.5	_	_	_	_
113	Distillation (EU-20 and EU-25 through EU-29)	_	-	-	-	 	0.1	-	_	-	0.00
	Four (4) paddle screens, identified as EU-31 and three										
114	(3) conveyors, identified as EU-33		-	-	-	-	440.0	-	-	-	2.00
445	Five (5) rotary dryers, one (1) cooler, and one (1)	004.0	004.0	004.0			000.4				20.0
115	transport system, collectively identified as EU-32	201.0	201.0	201.0	-	-	893.4	-	-	-	69.9
116 117	One (1) wine room, identified as EU-41 One (1) tank farm, identified as EU-42	•	-		-	-	19.5 19.0	-	-	-	-
118	EU-43, which consists of Building 88		-	_		-	4.69		-	-	_
119	One (1) mini-tank farm, identified as EU-45	-	_	-	_	 _	3.59	_	_	_	-
	One (1) barrel and emptying operation, identified										
120	as EU-61	-	-	-	-	-	12.0	-	_	-	-
	Six (6) warehouses, identified as EU-71 through										
121	EU-76	-	-	-	-	-	1,867	-	-	-	-
122	One (1) steam boiler, identified as EU-96	1.99	7.96	7.96	0.63	293.4	5.76	88.0	126,497	126,479	1.98
	One (1) steam boiler, identified as EU-97 (worst							40	04.000	0.1.055	
123	case fuel)	1.98	2.65	1.96	39.4	25.4	0.56	10.42	31,930	31,926	0.39
124 125	One (1) loading rack, identified as EU-46 Subtotal Significant Emission Unit	498	505	248	40	319	6.69 3,351	98	158 427	158,405	0.05 75
125	Fugitive Emissions	490	505		40	319	128.2	- 30	158,427	100,400	0.90
127	Emergency Generator-Diesel	0.28	0.16	0.16	1.62	9.60	0.28	2.20	462	462	4.41E-03
128	Emergency Generator-Natural gas	0.001	0.001	0.001	0.000	0.096	0.004	0.012	4.14	4.29	2.38E-03
129	FW Pump-Diesel	0.13	0.13	0.13	0.12	1.82	0.15	0.39	67.8	67.8	1.59E-03
130	Subtotal Insignificant Activities	0.41	0.29	0.29	1.74	11.5	0.43	2.60	533	534	8.38E-03
131	Total	498	505	249	42	330	3,480	101	158,961	158,939	76

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1		<u></u>				Appendix A: Em	issions Cal	culations	<u></u>								I	Page 4 of 23 ATSD App A
2						Summary of HAP Emissions												
3																		
4						Company Name:	MGPI of In	diana. LLC										
5									anaahura l	ndiana 470	25							
6					Dort	70 Operating Permit No.:	7 Kidge Av		enceburg, lı	1101a11a 4 <i>1</i> 0	25							
7					Pan	. •			ten Willoug	hhv								
'							: May 22, 20		iteri vvinougi	поу								
8 9						Date												
10 Significant Emission Units	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Manganese	Nickel	Acetaldehyde	Propionaldehyde	Methanol	Acrolein	PAH	1,3-Butadiene	Xylene	Total HAP
11	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr
12									***************************************	***************************************		<u> </u>	***************************************			oko to anno to		
One (1) pneumatic conveyor, identified as EU-11	000																	
One (1) pneumatic conveyor, identified as EO-11 One (1) corn receiving and storage system,	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
14 One (1) corn receiving and storage system, identified as EU-12	_	-	-	-	_	-	_	-	-	_	-	-	_	_	-	-	_	0.00
Seven (7) storage bins, collectively identified as EU	J-																	
15 13 Six (6) hammermills, collectively identified as EU-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
16 Six (6) harrimermins, collectively identified as E0-	-	-		-	_	-	_	-	-	_	-	-	_	-	-	-	-	0.00
EU-21, which consists of fourteen (14) open			404500								0.00	0.00=.00	4.645.55					0.04
17 fermenters Silos, surge hopper, and transport system: EU-34	-	-	1.04E-03	-	-	-	-	-	-	-	0.03	2.09E-03	1.04E-03	-	-	-	-	0.04
18 through EU-36	-	-	_	-	_	-	-	-	-	-	-	-	_	_	-	-	-	0.00
Twenty-four (24) closed fermenters, collectively											0.00	4.545.00	7.00=.00					0.00
19 identified as EU-22	-	-	7.69E-03	-	-	-	-	-	-	-	0.23	1.54E-02	7.69E-03	-	-	-	-	0.26
20 Two (2) beer wells, identified as EU-23 and EU-24	-	-	_	-	_	-	-	-	-	-	-	-	_	_	-	-	-	0.00
Distillation (EU-20 and EU-25 through EU-29)			0.045.04								0.045.00	0.045.04	0.045.04					0.405.00
Four (4) paddle screens, identified as EU-31 and	-	-	2.04E-04	-	-	-	-	-	-	-	2.81E-03	2.04E-04	2.04E-04	-	-	-	-	3.43E-03
three (3) conveyors, identified as EU-33	-	-	5.84E-02	-	-	-	-	-	-	-	1.77	1.17E-01	5.84E-02	-	-	-	-	2.00
Five (5) rotary dryers, one (1) cooler, and one (1)																		
transport system, collectively identified as EU-32	_	_	0.32	_	_	_	_	_	_	_	55.2	_	11.05	3.28	_	_	_	69.9
One (1) rail car loader and one (1) truck loader,									***************************************									
24 identified as EU-37 and EU-38	-				-	-	-	-	-	-			-	-	-	-	-	0.00
25 One (1) wine room, identified as EU-41	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
 One (1) tank farm, identified as EU-42 EU-43, which consists of Building 88 	-	-	-	-	-	-	-	-	-	-	***	-	-	-	-		-	0.00
28 One (1) mini-tank farm, identified as EU-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
One (1) barrel and emptying operation, identified as	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	_	0.00
29 EU-61	-			-	-	-	-	-	188	-		_	-	-	-	_	-	0.00
Six (6) warehouses, identified as EU-71 through EU	서 <u></u>	_	_	_	_	_	_	_	_		_	_	_	_		_	_	0.00
31 One (1) steam boiler, identified as EU-96	2.20E-03	1.26E-03	7.86E-02	1.89E+00	3.56E-03	5.24E-04	1.15E-03	1.47E-03	3.98E-04	2.20E-03		-	_				_	1.98
One (1) steam boiler, identified as EU-97 (worst																		
32 case fuel)	4.29E-04	2.45E-04	1.53E-02	3.68E-01	6.95E-04	1.80E-03	5.99E-04	5.99E-04	1.20E-03	5.99E-04	-	-	_	-	-	-	-	0.39
One (1) loading rack, identified as EU-46	-		6.69E-03	-	-	-	-	-	-	-	6.69E-03	_	3.34E-02		-	-	-	0.05
34 Fugitive Emissions		4.505.03	1.28E-01		4 005 00		4.755.00		4.005.00		1.28E-01	- 0.44	6.41E-01		0.005:05	-		0.90
35 Subtotal Significant Emission Unit	2.63E-03	1.50E-03	0.62	2.25	4.26E-03	2.32E-03	1.75E-03	2.07E-03	1.60E-03	2.80E-03	57.4	0.14	11.80	3.28	0.00E+00	0.00E+00	0.00E+00	75.5
36 Emergency Generator-Diesel 37 Emergency Generator-Natural gas	2.17E-03 5.87E-05		2.21E-04 1.67E-03	- 1.35E-05	7.87E-04		-	-		-	7.06E-05 2.35E-04		7 505 05	2.21E-05 2.35E-04	5.94E-04 4.05E-06	2.48E-05	5.40E-04	4.41E-03 2.32E-03
38 FW Pump-Diesel	3.84E-04	-	4.85E-04	1.35E-05	1.68E-04	-			-		2.35E-04 3.15E-04	-	7.50E-05		6.91E-05	∠.40E-U5	1.17E-04	2.32E-03 1.58E-03
39 Subtotal Insignificant Activities	2.62E-03	0.00E+00	2.38E-03	1.35E-05	9.55E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.21E-04	0.00E+00	7.50E-05		6.67E-04	2.48E-05	6.58E-04	0.01
40 Total	5.24E-03	1.50E-03	0.62	2.25	5.21E-03	2.32E-03	1.75E-03	2.07E-03	1.60E-03	2.80E-03	57.4	0.14	11.8	3.28	6.67E-04	2.48E-05	6.58E-04	75.5
101	10.272-03	1.502-55	1 0.02	2.20	J 0.21E-03	L.ULL-UJ	1 0 0		1.002-03	1 2.00L-03	L 77.7	L 0.17	1 11.0	1 0.20	10.0712-04		J.00L-04	70.0

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9			9	900000000000000000000000000000000000000			8	Ţ
				Outlet Grain	Maximum Air	PTE of PM/PM10	PTE of PM/PM10	PTE of PM2.5
	Stack ID	Process Description	Control Device	Loading	Flow Rate	after	after	after Control**
10				(gr/dscf)	(scfm)	Control* (lb/hr)	Control (ton/yr)	(lb/hr)
	S-103	Grain Receiving and pneumatic	Baghouse	0.004	12,600	0.43	1.89	0.07
11	3-103	conveyor EU-11	Dayriouse	0.004	12,000	0.43	1.09	0.07
12	S-111	Corn Receiving and storage system EU-12	Baghouse	0.004	15,000	0.51	2.25	0.09
13	S-112	Grain Transport system EU-12	Baghouse	0.004	1,354	0.05	0.20	0.01
14	inside	Storage: (7) Grain Storage Silos (EU-13)	Baghouse	0.004	1,354	0.05	0.20	0.01
15	S-104	(6) Hammermills and hopper (EU- 14)	Baghouse	0.004	6,000	0.21	0.90	0.03
16		DDGS Storage (EU-34)	***************************************		ennennannannannannannannannannannannanna			
17	S-341	Storage silo	Baghouse	0.004	905	0.03	0.14	0.01
18	S-342	Storage silo	Baghouse	0.004	905	0.03	0.14	0.01
19	S-343	Surge Hopper	Baghouse	0.004	86	0.00	0.01	0.00
20	S-344	Surge Hopper	Baghouse	0.004	86	0.00	0.01	0.00
21	S-350	DDGS Rail Loadout (EU-35)	Baghouse	0.004	905	0.03	0.14	0.01
22	S-360	DDGS Truck Loadout (EU-36)	Baghouse	0.004	905	0.03	0.14	0.01
23	S-370	DDGS Rail Car Loader (EU-37)	None	0.004	905	0.03	0.14	0.01
24	S-380	DDGS Truck Loader (EU-38)	None	0.004	905	0.03	0.14	0.01
25	Total					1.4	6.3	0.2

26 *Assume all PM emissions equal PM10 emissions.

** Assume controlled PM2.5 emissions equal 17% PM/PM10 emissions (AP-42 Table 9.9.1-1 Reference 40).

27 28

29 Methodology:

30 outlet grain loading (gr/dscf) provided by source with maximum air flow rate (scfm)

31 PTE of PM/PM10 after Control (lb/hr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x (60 min/hr) x (1 lb/7000 gr)

32 PTE of PM/PM10 after Control (ton/yr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x (60 min/hr) x (1 lb/7000 gr) x (8760 hr/yr) x (1 ton/2000 lb)

33 PTE before Control (ton/yr) = PTE after Control (ton/yr) / (1-Control Efficiency)

34 PM2.5 Control Efficiency is assumed to be less than the PM/PM10 Control Efficiency.

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	1	ı	К	ΓL	М	N	0	Р	Q	R	S
1	Appendix A: Emissions	Calculations	1		1			L	1 ~	Page 5 of 23	
2	Grain Handlin									•	.,
3		9									
4	Company Name:	MGPI of Indiana	ı. LLC								
5		7 Ridge Avenue		ceburg, I	ndiana	47025					
6	Part 70 Operating Permit No.:	-		•							
7	Reviewer:	Teresa Freemar	n / Krister	n Willoug	hby						
8	Date:	May 22, 2014									
9											
10	PTE of PM2.5 after Control (ton/yr)	PM/PM10 Control Efficiency	PM2.5 Control Efficiency	PTE of PM/PM10 before Control (ton/yr)	PTE of PM2.5 before Control (ton/yr)	Limited PTE PM (lb/hr)	Limited PTE PM10 (lb/hr)	Limited PTE PM2.5 (lb/hr)	Limited PTE PM (ton/yr)	Limited PTE PM10 (ton/yr)	Limited PTE PM2.5 (ton/yr)
11	0.32	99%	98%	189.2	16.1						
12	0.38	99%	98%	225.3	19.1	1.20	1.20	1.20	5.26	5.26	5.26
13	0.03	99%	98%	20.3	1.73	0.219	0.219	0.219	0.96	0.96	0.96
14	0.03	99%	98%	20.3	1.73						
15	0.15	99%	98%	90.1	7.66			***************************************	***************************************		***************************************
16			.paoaacaaaaaaaaaaaaaaaaa	100000000000000000000000000000000000000	.	900000000000000000000000000000000000000	10000000000000000000000000000000000000	g0000000000000000000000000000000000000	19000000000000000000000000000000000000	p 000000000000000000000000000000000000	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
17	0.02	99%	98%	13.6	1.16	0.136	0.136	0.136	0.60	0.60	0.60
18	0.02	99%	98%	13.6	1.16						
19	0.00	99%	98%	1.3	0.11						
20	0.00	99%	98%	1.3	0.11				***************************************	***************************************	ananananananananananananananananananan
21	0.02	99%	98%	13.6	1.16	0.289	0.289	0.289	1.27	1.27	1.27
22	0.02	99%	98%	13.6	1.16					***************************************	
23	0.02	0%	0%	0.14	0.02	1.25	1.25	1.25	5.48	5.48	5.48
24	0.02	0%	0%	0.14	0.02	***************************************		***************************************			***************************************
25	1.1	10.9	10.8	602.5	51.2	3.1	3.1	3.1	13.6	13.6	13.6
26											
27											
28											
30											
31											
32											
33											
34											

A A	В	С	D Calculations	E
			Appendix A: Emissions Calculations	
3			VOC Emissions from Distill	ation and Beer Wells
4				MGPI of Indiana, LLC
5				7 Ridge Avenue, Lawrenceb
6			Part 70 Operating Permit No.:	
7				Teresa Freeman / Kristen Wi
8			Date	: May 22, 2014
9				
10 EU-20, 25-29 Distillation				
11 12	Potential to Emit (PTE) of VOC:			
12				
	Markova Warra	VOC Emission	V00 F	V00 F
13	Maximum Usage	Factor	VOC Emission rate	VOC Emission rate
13 14	(gal/hr)	(lb/1000 gal)	(lb/hr)	(ton/yr)
14	31,221	0.000679	0.02	0.1
15				
Methodology:				
17	Emission factor is based on facility information and furnished by source.			
18	Emission Rate (lb/hr) = Usage (gal/hr)/1,000 x EF (lb/1,000 gal)			
19 20	Emission Rate (ton/yr) = Emission Rate (lb/hr) x 8,760 hr/yr / 2,000 lb/ton			
•••••				
21 EU-20, EU25- EU-29 Distillation Operations				
22				
23	VOC (Ib/hr)	==	0.02	
24				
23 24 25 26 27			Distillation	
26	Uncontrolled PTE	Ib HAPs/Ib VOC	ton/yr	
27	Acetaldehyde	3.03E-02	2.81E-03	
28	Propionaldehyde	2.20E-03	2.04E-04	
29	Methanol	2.20E-03	2.04E-04	
29 30	Formaldehyde	2.20E-03	2.04E-04	
31	Total Uncontrolled HAP		3.43E-03	1
32		<u> </u>		_
33 Methodology:				
34	lb HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003			
35	HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb)			
36				
37				
38 EU-23 and EU-24 Beer Wells #3 and #1				
	Maximum Usage		1.05	0 1,000 bu/hr
39 40			1,55	,
		Emission Factor	VOC Emission rate	VOC Emission rate
41	Pollutant	(lb/1,000 bu)	(lb/yr)	(ton/yr)
42	VOC	2.72	2.86	12.5
43				
44 Methodology:	Emission factor is based on facility information and furnished by source.			
44 Methodology: 45	Emission factor is based on facility information and furnished by source. Emission rate (lb/hr) = Maximum usage (1.000 bu/hr) x EF (lb / 1.000 bu)			
44 Methodology:4546	Emission rate (lb/hr) = Maximum usage (1,000 bu/hr) x EF (lb / 1,000 bu)			
44 Methodology:454647				
44 Methodology:4546	Emission rate (lb/hr) = Maximum usage (1,000 bu/hr) x EF (lb / 1,000 bu)			

				T
Α Α	В	C	D	<u>E</u>
50 51 52 53 54 55 56 57			opendix A: Emissions Calculations Emissions from Open and Closed F	armantation
51		VOC	Emissions from Open and Closed F	ermentation
52			Company Name:	MGPI of Indiana, LLC
54				7 Ridge Avenue, Lawrenceb
- C-				
55			Part 70 Operating Permit No.:	Teresa Freeman / Kristen W
57				: May 22, 2014
58			Date	. Way 22, 2014
59 EU-21 Open Fermentation				
60	Potential to Emit (PTE) of VOC from Open Fermentation:			
61	r diamanta mini (r 12) ar 100 main opan r annomanam			
62	Maximum Usage		1,095,000) bu/vr
61 62 63	Mazimam Coago		1,000,000	, 54, 41
		Emission Factor	VOC Emission rate	VOC Emission rate
64	Pollutant	(lb/1,000 bu)	(lb/yr)	(ton/yr)
65	Ethanol	14.2	15,549	7.77
66	Ethyl Acetate	0.046	50	0.03
67	Isoamyl Alcohol	0.013	14	0.007
66 67 68	Isobutyl Alcohol	0.004	4	0.002
69	Total VOC	14.3		7.81
70				
71 Methodology:				
	Emission Factors taken from AP-42, Table 9.12.3-1			
73	Emission Rate (ton/yr) = Usage (bu/yr)/1,000 x Emission Factor (lb/1,000 bu) / 2,000 lb/ton			
74	Emission Rate (lb/hr) = Emission Rate (ton/yr) x 2,000 lb/ton / 8,760 hr/yr			
75				
76	Potential to Emit (PTE) of HAP from Open Fermentation:			
72 73 74 75 76				
78	VOC (III	b/hr) =	1.78	
79				
80		0	pen Fermentation	1
81	Uncontrolled PTE	lb HAPs/lb VOC	ton/yr	1
82	Acetaldehyde	4.02E-03	3.14E-02	1
83	Propionaldehyde	2.67E-04	2.09E-03	
84	Methanol	1.33E-04		
78 79 80 81 82 83 84		1.552-04	1.04E-03	_
	Formaldehyde	1.33E-04	1.04E-03 1.04E-03	
86				-
86 87	Formaldehyde		1.04E-03	
86 87	Formaldehyde		1.04E-03	
86 87 88	Formaldehyde		1.04E-03	
86 87 88 89 Methodology:	Formaldehyde Total Uncontrolled HAP		1.04E-03	
86 87 88 89 Methodology:	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003		1.04E-03	
86 87 88 89 Methodology: 90	Formaldehyde Total Uncontrolled HAP		1.04E-03	
86 87 88 89 Methodology: 90 91	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003		1.04E-03	
86 87 88 89 Methodology: 90 91 92 93 EU-22 Closed Fermentation	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb)		1.04E-03	
86 87 88 89 Methodology: 90 91 92 93 EU-22 Closed Fermentation	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation:		1.04E-03 0.04) bu/yr
86 87 88 89 Methodology: 90 91 92 93 EU-22 Closed Fermentation	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb)		1.04E-03) bu/yr
86 87 88 89 90 91 92	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage	1.33E-04 Emission Factor	1.04E-03 0.04 8,103,000 VOC Emission rate	bu/yr VOC Emission rate
86 87 88 89 90 91 92 93 EU-22 Closed Fermentation 94 95	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant	1.33E-04	1.04E-03 0.04 8,103,000	-
86 87 88 89 90 91 92 93 EU-22 Closed Fermentation 94 95	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage	1.33E-04 Emission Factor	1.04E-03 0.04 8,103,000 VOC Emission rate	VOC Emission rate
86 87 88 89 Methodology: 90 91 92 93 EU-22 Closed Fermentation 94 95	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant	Emission Factor (lb/1,000 bu)	1.04E-03	VOC Emission rate (ton/yr)
86 87 88 89 90 91 92 93 EU-22 Closed Fermentation 94 95	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol	1.33E-04 Emission Factor (lb/1,000 bu) 14.2	1.04E-03 0.04 8,103,000 VOC Emission rate (lb/yr) 115,063	VOC Emission rate (ton/yr) 57.53
86 87 88 89 90 91 92 93 EU-22 Closed Fermentation 94 95	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate	1.33E-04 Emission Factor (Ib/1,000 bu) 14.2 0.046	1.04E-03 0.04 8,103,000 VOC Emission rate (lb/yr) 115,063 373	VOC Emission rate (ton/yr) 57.53 0.19
86 87 88 89 Methodology: 90 91 92 93 EU-22 Closed Fermentation	Formaldehyde Total Uncontrolled HAP Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003 HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb) Potential to Emit (PTE) of VOC Closed Fermentation: Maximum Usage Pollutant Ethanol Ethyl Acetate Isoamyl Alcohol	1.33E-04 Emission Factor (Ib/1,000 bu) 14.2 0.046 0.013	1.04E-03 0.04 8,103,000 VOC Emission rate (Ib/yr) 115,063 373 105	VOC Emission rate (ton/yr) 57.53 0.19 0.05

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104	Methodology:						
105		Emission Factors taken from AP-42, Table 9.12.3-1					
105 106 107 108 109 1110 1111 1112 1113 1114 1115 1116 1117		Emission Rate (ton/yr) = Usage (bu/yr)/1,000 x Emission Factor (lb/1,000 bu) / 2,000 lb/ton					
107		Emission Rate (lb/hr) = Emission Rate (ton/yr) x 2,000 lb/ton / 8,760 hr/yr					
108							
.09		Potential to Emit (PTE) of HAP from Closed Fermentation:					
.10							
.11		VOC (lb/hr)	=	13.19			
12							
13				Closed Fermentation			
14		Uncontrolled PTE	lb HAPs/lb VOC	ton/yr			
15		Acetaldehyde	4.02E-03	2.32E-01			
16		Propionaldehyde	2.67E-04	1.54E-02			
17		Methanol	1.33E-04	7.69E-03			
.18		Formaldehyde	1.33E-04	7.69E-03	1		
19		Total Uncontrolled HAP		0.26	1		
118 119 120					•		
	Methodology:						
22	Ib HAPs/lb VOC emission factors are from uncontrolled distillation in Permit No. T133-31145-00003						
123		HAP (ton/yr) = E.F. (lb HAPs/lb VOC) x VOC (lb/hr) x 8760 (hrs/yr) x 1/2000 (ton/lb)					

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54	ırg, Indiana 47025		
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62			
63	VOC Emission rate	1	
64	(lb/hr)		
65	1.78		
66	0.006		
67	0.002		
68	0.0005		
69	1.78		
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97	VOC Emission rate (lb/hr)		
98	13.14		
99	0.04		
100	0.01		
101	0.004		
102	13.2		
103		***************************************	

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1		-	Appendix A: Emi	ssions Calculation	ıs			Page 8 of 23 ATSD App A
2	-		Summary of	of Emissions				
3	-							
4	-		Company Name:	MGPI of Indiana, L	LC			
5	-			7 Ridge Avenue, L		diana 47025		
6	-	Part 70 Opera		T029-32119-00005				
7	-		=	Teresa Freeman / I		by		
8	1			May 22, 2014	•			
9	-			-				
10	EU-31 and EU-33 Paddle Screens/ Conveyors							
			May Hone-	VOC Emission	I	VOC Emission		
11		Source	Max Usage (gal/hr)	Factor* (lb/1,000 gal)	rate (lb/hr)	rate (ton/yr)		
12		Spirits System	20,859	3.4	70.92	311		
13		Whisky System	4,319	6.8	29.37	129		
14		Trinoity Cyclem	1,010	Total:	100	440		
15								
16								
17		Emission Rate = Maximum Usa	ge (gal/hr)/1,000 x V0	DC Emission factor (lb.	/1,000 gal)			
18		* Spirits System analysis of still	age based on 0.05% a	alcohol concentration.				
19		*Whisky System analysis of still	age based on 0.1% a	Icohol concentration.				
20								
21		VOC (lb/hr)	=	100.29				
22					7			
23	_		 ,	lage	-			
24		Uncontrolled PTE	lb HAPs/lb VOC	ton/yr	-			
25 26		Acetaldehyde	4.02E-03	1.77	4			
26		Propionaldehyde Methanol	2.67E-04 1.33E-04	1.17E-01 5.84E-02	-			
28		Formaldehyde	1.33E-04 1.33E-04	5.84E-02 5.84E-02	-			
29		Total Uncontrolled HAP	1.JJL-04	2.00	1			
	_ Methodology:	Total Oncomioned HAI		۵.00	J			
31	-	Ib HAPs/lb VOC emission facto	rs are from uncontroll	ed distillation in Permi	No T133-31145-0	0003 and derived from	n the mash s	crubber emissions
32		HAP (ton/yr) = E.F. (lb HAPs/lb				oooo ana achiica hon	i alo masire	STADDOLOTHIOOIONG

	Α	В	С	D	E	F	G	H		J	K
1				Appendix A: Emissions Calculations						Page 8 of 23	B ATSD App A
2				Five (5) rotary dryers, one (1) cooler an	d one (1) trans	port system					
3											
4				Company Name:	MGPI of India	na, LLC					
5				Address:	7 Ridge Avenu	ue, Lawrencebi	ırg, Indiana 47	7025			
6			Par	t 70 Operating Permit No.:	T029-32119-00	0005					
7				Reviewer:	Teresa Freem	an / Kristen Wi	lloughby				
8				Date	May 22, 2014						
9											
	EU-32 Rotary Dryers										
11	Maximum Usage: 25.5 ton/hr										
12			-								
			Controlled	Controlled Emissions	Controlled	Uncontrolled	Uncontrolled				
			Emission Factor	(lb/hr)	Emissions	Emissions	Emissions				
13			(lb/ton)	(ID/TII)	(ton/yr)	(lb/hr)	(ton/yr)				
14		PM	0.27	6.885	30.2	45.90	201.0				
15		PM10	0.27	6.885	30.2	45.90	201.0				
16		PM2.5	0.27	6.885	30.2	45.90	201.0				
17											
18	Methodology:										
19		Controlled emission	on Factor from AP-42	2, Table 9.9.7-1							
20		Controlled Emission	ons (ton/yr) = Usage	(ton/yr) x EF (lb/ton) x 8,760 hr/yr / 2,000 lb/ton							
21				ed on an 85% control efficiency for controlled en	nissions.						
22		PM2.5 emissions	conservatively assun	ned to be equal to PM10 emissions.							
23											
24		VOC Emissions	s from the Dryers		Potential VOC	Detential	1				
		Dryer Feed	Water Content	VOC Content of Water (lb VOC/lb water)	from Dryers	Potential VOCs from					
25		Rate (ton/hr)	(% by wt)	voo oomen or valer (ib voorib water)	(lb/hr)	Dryers (ton/yr)					
26		25.5	66.66%	0.006	204.0	893.4					
27					•	•	-				
	Methodology										
29		Potential VOC Em	issions from Dryers	(lb/hr) = Dryer Feed Rate (25.5 ton/hr) x Water (Content of Feed (%	6 by wt) x (lb VOC	/lb water) x (2000) lb/1 ton)			
30		Potential VOC Em	issions from Dryers	(ton/yr) = Potential VOC Emissions from Dryers	(lb/hr) x (8760 hr/y	r) x (1 ton/2000 lb)				
31											
32		HAP Emissions	from the Dryers		1	1					
			HAP % (by wt of		Potential HAP						
		HAP	VOC)	Potential HAP from Dryers (lb/hr)	from Dryers						
33			100)		(ton/yr)						
34		Acetaldehyde	6.18%	12.61	55.24						
35		Acrolein	0.37%	0.75	3.28						
36		Methanol	1.24%	2.52	11.05						
37		Formaldehyde	0.04%	0.07	0.32						
38		Total			69.9						
39		Note: HAP emission	on rates based on pe	rformance tests at similar facilities.							
	Methodololgy										
41		Potential HAP Emi	issions from Dryers (lb/hr) = Potential VOC emissions from dryer (lb/ton/yr) = Potential MAP Emissions from Dryers (hr) x HAP % by w	t of VOC					
42		Ih)		,., I storius. I'm Emissiono nom Diyora	x (0, 00 m/y	.,					

А	В	С
1		
2		
3		
4		
5		
6		
7		
8		
9		
10 EU-41 through EU-43, EU-45, EU-61 Tanks and Bottling Operations		
11	Source	
12	EU-41 (Wine Room)	
13	EU-42 (Tank Farm)	
14	EU-43 (Bldg 88)	
15	EU-45 (Mini Tank Farm)	
16	EU-61 (Whiskey System)	
17	EU-61 (Gin System)	
18	Total	
19		
20 Methodology:		
21	From Permit No. 24407: Emission Factors based on source estimates. No AP-42 or FIRE emission factors are available	
22	Emissions (ton/yr) = Maximum usage (pg/yr)/1,000 x EF (lb/1,000 gal) / 2,000 lb/ton	
23	Emissions (lb/hr) = Emissions (ton/yr) \times 2,000 lb/ton / 8,760 hr/yr	
24		
25 EU-71 through EU-76 Warehouse Emissions		***************************************
26	Source	
27	EU-71 through EU-76	
28		***************************************
29 Methodology:		
30	Emission factor taken from AP-42 Table 9.12.3-1	
31	Emissions (ton/yr) = # barrels x EF (lb/barrel/yr) / 2,000 lb/ton	

				·					
	D	E	F	G	Н	l	J	K	L
1		Appendix A: I						Page 9 of 2	3 ATSD App A
2		Sumn	nary of Emissi	ons					
3									
4	Coi	mpany Name:	MGPI of India	ına, LLC					
5			7 Ridge Aven		eburg, Ind	iana 47025			
6	Part 70 Operating	g Permit No.:	T029-32119-0	0005					
7		Reviewer:	Teresa Freem	an / Kristen	Willoughb	у			
8		Date:	May 22, 2014						
9									
10									
		VOC	V00	V00					
	Maximum Usage	Emission Factor	VOC Emissions	VOC Emissions					
11	(PG/yr)	(lb/1000 gal)	(lb/hr)	(ton/yr)					
12	32,000,000	1.22	4.46	19.5					
13	30,000,000	1.27	4.34	19.0					
14	14,000,000	0.67	1.07	4.69					
15	10,000,000	0.718	0.82	3.59					
16	13,000,000	0.95	1.41	6.18					
17	12,775,000	0.913	1.33	5.83					
18	, , , , , , , , , , , , , , , , , , ,		13.43	58.8					
19			1						
20									
21									
22									
23									
24									
25									
			VOC	VOC					
	Emission Factor		Emissions	Emissions					
26	(lb/barrel/yr)	# Barrels	(lb/yr)	(ton/yr)					
27	6.9	541278	3,734,818	1,867					
28									
29									
30									
31									

	Α	В	С	D	E	F	G	Н
1	<u> </u>	D	C		A: Emissions Ca	-	² age 10 of 23 A	
2				• •	t Truck Loading		age 10 01 23 P	(100 App A
3				Nan Car and	I HUCK LOAUING	EIIIISSIUIIS.		
-				O N	MODI -fil-di			
4				Company Name:		•		
5					_	, Lawrenceburg,	Indiana 47025	
6			Part 70 Operat	ing Permit No.:	T029-32119-000			
7						n / Kristen Willou	ghby	
8				Date:	May 22, 2014			
9								
10	EU-46 Rail	Car and Truck Load	ding Emissions					
11				Loading Pr	operties ^(a)		Throughput ^(D)	
	En	nission Point	Loading	Loading	Vapor Pressure	Vapor Molecular	Annual	
			Temperature (F)	Temperature (R)	(psi)	Weight	(1,000 gal/yr)	
12	D-11 O		` '	` ′		(lb/lb-mol)		
13	Rall Car	and Truck Loading	62	521.67	0.689	46	29,450	
14			***************************************			İ		
15					Uncontrolled			
	En	nission Point	Saturation	Loading Loss ^(d)	Emmissions ^(e)			
16			Factor ^(c)	(lb/10 ³ gal)				
17					Annual (ton/yr)			
18	Rail Car	and Truck Loading	0.6	0.454	6.69			
19		Total			6.69			
20								
	Methodolo							
22		Vapor pressure and r Antoine's Coefficients						
24		Antome's Coemcients	A =	$\log P = A - [B/(T + 6)]$ 5.37229	رد)], ۳ ۱۱۱ baı, ۱ ۱۱۱	N.		
25			B =	1670.409				
26			C =	-40.191				
27			T =	289.667	K			
28			P =	0.047	bar			
29			P =	0.689	psi			
30	/h\	Maximum annual res	duction of:	21 000 000	colhe			
32	(a)	Maximum annual pro	GUCTION OI.	31,000,000	gal/yr Product proof:	190	proof	
33				Product Ethar	nol concentration:	95%	_ P. 001	
34			М	aximum annual Et		29,450,000	gal/yr	
35	(c)	Saturation factor for s						
36	,							
37	. ,	Loading loss estimate		•	ology in Section 5.	2 of AP-42, Fifth B	=dition, Volume	:1.
38		Sample Calculation, a		ss: S = Saturation Fac	otor ()			
39 40		L_ (ID/TO gal)=		M = Vapor Molecu		nol)		
41				P = Vapor Pressui		1101)		
42				T = Loading Temp				
43								
44		L _L =	(12.46) (0	.6) (46 lb/lb-mol) ().689 psi)	=	0.454	lb / 10³ gal
45		-		521.67 R	-	•		
46								
47		Emissions estimated		ading loss to the ap	plicable loading th	nroughput.		
48		sample calculation, a	nnual emissions:					

	Α	В	С	D	Е	F	G	Н
49		-	0.454 lb	29,450 x1,000 gal	ton	=	6.69	ton
50			1000 gal	yr	2,000 lb			yr
51								
52								
					Uncontrolled			
		HAP	Product	HAP Fraction	PTE HAP			
53					(ton/yr)			
54		Acetaldehyde ¹	ethanol	1.00E-03	6.69E-03			
55		Methanol ²	ethanol	5.00E-03	3.34E-02			
56		Formaldehyde 1	ethanol	1.00E-03	6.69E-03			
57		Total			4.68E-02			
		1. Acetaldehyde and	Formaldehyde are	estimated to be at	trace levels in eth	anol. It will		
58		conservatively assum						
59		2. Methanol concentra	ation is based on r	maximum weight pe	ercent of 0.5% as	per ASTM D		
60		Note: HAP emission	rates based on per	formance tests at s	imilar facilities.			

. 1	Α	В	С	D	Е	F	G	Н
1				Appendix A: Emiss	ions Calculations	,		
2				Equipmnet L	eak Fugitive Emis	sions		
3								
4				Company Name:	MGPI of Indiana,	LLC		
5				Address:	7 Ridge Avenue,	Lawrencebu	ırg, Indiana 4	7025
6			Part 70 Op	erating Permit No.:	T029-32119-0000	5		
7				Reviewer:	Teresa Freeman	/ Kristen Wi	lloughby	
8				Date:	May 22, 2014			
9								
10	EU-81 Equipment Leak Fugitive Emissions							
						VOC	VOC	
				Emission Factor		1	Emissions	
11		Component	Count	(lb/hr/component)	% VOC	(lb/hr)	(ton/yr)	
L2		Pumps	124	0.0439	60%	3.27	14.31	
.3		Valves 	4,481	0.0089	60%	23.93	104.81	
L4		Flanges	6,940	0.0005	60%	2.08	9.12	
15			100000000000000000000000000000000000000		Total	29.28	128.23	
16								
	Methodology:							
18								
		Component counts b	pased on facility	estimates. Counts exclu	ide components with	in former		
		•	-	estimates. Counts excluowned or operated by M	•	in former		
20		bottling operation that	at are no longer		GPI of Indiana, LLC.		,	
0		bottling operation that	at are no longer of ission factor, tak	owned or operated by M en from "Protocol for Ec	GPI of Indiana, LLC.		, ,	
20 21 22		bottling operation that Average SOCMI em EPA-453/R-95-017,	at are no longer o ission factor, tak November 1995	owned or operated by M en from "Protocol for Ec	GPI of Indiana, LLC. Juipment Leak Emiss		,	
20 21 22 23		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = #	at are no longer o ission factor, tak November 1995 components x E	owned or operated by M en from "Protocol for Ec	GPI of Indiana, LLC. juipment Leak Emiss 6 VOC		,	
20 21 22 23 24		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = #	at are no longer o ission factor, tak November 1995 components x E	owned or operated by M en from "Protocol for Ec EF (lb/hr/component) x %	GPI of Indiana, LLC. juipment Leak Emiss 6 VOC		,	
20 21 22 23 24		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = #	at are no longer of ission factor, tak November 1995 components x E Emissions (lb/hr	owned or operated by M en from "Protocol for Ec EF (lb/hr/component) x %	GPI of Indiana, LLC. juipment Leak Emiss 6 VOC /ton	sion Estimates' 128.23	,	
20 21 22 23 24		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = # Emissions (ton/yr) =	at are no longer of ission factor, tak November 1995 components x E Emissions (lb/hr	owned or operated by M en from "Protocol for Ec EF (lb/hr/component) x %	GPI of Indiana, LLC. puipment Leak Emiss VOC ton rugitive HAT to	sion Estimates' 128.23	',	
20 21 22 23 24 25		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = # Emissions (ton/yr) = Total Fugitive VOC	at are no longer of ission factor, tak November 1995 components x Emissions (lb/hr s (ton/yr)	owned or operated by Men from "Protocol for Ed EF (lb/hr/component) x %) x 8,760 hr/yr / 2,000 lb	GPI of Indiana, LLC. juipment Leak Emiss 6 VOC /ton	sion Estimates' 128.23 THISSIONS	',	
20 21 22 23 24 25 26		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = # Emissions (ton/yr) = Total Fugitive VOC	at are no longer of ission factor, tak November 1995 components x Emissions (lb/hr s (ton/yr)	en from "Protocol for Eder (lb/hr/component) x %) x 8,760 hr/yr / 2,000 lb	GPI of Indiana, LLC. puipment Leak Emiss VOC ton rugitive HAT E ttons/se	128.23 THISSIONS	·,	
220 221 222 223 224 225 226 227		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = # Emissions (ton/yr) = Total Fugitive VOC: HAP Acetaldehyde 1	at are no longer of ission factor, tak November 1995 components x E Emissions (lb/hr s (ton/yr) HA	en from "Protocol for Economic Follows on the second for Economic Follows on the secon	GPI of Indiana, LLC. puipment Leak Emiss VOC ton rugitive FIAT E tons/v 1.28E-t	128.23 Emissions 01	,	
20 21 22 23 23 24 225 226 227		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = # Emissions (ton/yr) = Total Fugitive VOC: HAP Acetaldehyde 1 Methanol 2	at are no longer of ission factor, tak November 1995 components x E Emissions (lb/hr s (ton/yr) HA	en from "Protocol for Eder (lb/hr/component) x 9 EF (lb/hr/component) x 9 X 8,760 hr/yr / 2,000 lb P Fraction 1.00E-03	GPI of Indiana, LLC. puipment Leak Emiss VOC ton rugitive FIAT E thousive 1.28E-0	128.23 Emissions 01		
20 21 22 23 24 25 26 27 28 29		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = # Emissions (ton/yr) = Total Fugitive VOC: HAP Acetaldehyde 1 Methanol 2 Formaldehyde 1 Total 1. Acetaldehyde and Formaldehyde an	at are no longer of ission factor, tak November 1995 components x Emissions (lb/hr s (ton/yr)	en from "Protocol for Economic Protocol for Economic Protocol for Economic Protocol for Economic Praction Description De	GPI of Indiana, LLC. uipment Leak Emiss VOC /ton rugitive FIAT E /tons/w 1.28E-0 6.41E-0 1.28E-0 0.90 s in ethanol. It is conse	128.23 -missions 01		
19 20 21 22 23 24 25 26 27 28 29 30 31		bottling operation that Average SOCMI em EPA-453/R-95-017, Emissions (lb/hr) = # Emissions (ton/yr) = Total Fugitive VOC: HAP Acetaldehyde 1 Methanol 2 Formaldehyde 1 Total 1. Acetaldehyde and Formaldehyde yde and Formal	at are no longer of ission factor, tak November 1995 components x E Emissions (lb/hr s (ton/yr)	en from "Protocol for Eder (lb/hr/component) x 9 EF (lb/hr/component) x 9 EF (raction 1.00E-03 E.00E-03	GPI of Indiana, LLC. uipment Leak Emiss 6 VOC /ton rugitive FIAT E	128.23 THISSIONS O1 O1 O1 ervatively		

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1		Page 11 of 23 ATSD App A
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32		
33		

	A B	D	Е	F	G	Н	I	J	K				
1			Appendi	x A: Emission Cal	culations				Page 12 of 23 ATSD App A				
2			Natur	al Gas Combustio	n Only								
3				MMBTU/HR >100									
4				Utility Boiler									
5			Company Name:	MGPI of Indiana,	LLC								
6			Address:	7 Ridge Avenue,	Lawrencebur	g, Indiana 470	25						
7		Part 70 Operating Permit No.: T029-32119-00005											
8	Reviewer: Teresa Freeman / Kristen Willoughby												
9	Date: May 22, 2014												
10													
11	Heat Input Capacity	Potential Throughpo	ut										
12	MMBtu/hr	MMCF/yr											
13													
14	244.0	2095.5											
15		pacacacacacacacacacacacacacacacacacacac			000000000000000000000000000000000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000						
16			900000000000000000000000000000000000000	000000000000000000000000000000000000000	Pollutant	090000000000000000000000000000000000000	poosooooooo	***************************************					
17		PM*	PM10*	direct PM2.5*	SO2	NOx	voc	CO					
18	Emission Factor in lb/	1.9	7.6	7.6	0.6	280.0	5.5	84.0					
19						**see below			_				
20													
21	Potential Emission in	1.99	7.96	7.96	0.63	293.4	5.76	88.0					
22									_				
23	*PM emission factor is				d filterable PM	110 combined.							
24	PM2.5 emission factor	is condensable and	filterable PM2.5 cor - ∠ou (มเษ-เงอคอ) บ	mbined. 1 190 (post-19050),	LUW INUX DUI	IICI - 14U,							
25	Flue des recirculation =			77		,							
26													
	Methodology	bood on several fini											
-	All emission factors are	e dased on normal firi											
	MMBtu = 1,020,000 E	ı											
	MMCF = 1,000,000 Cu	ı											
31	Potential Throughput (N	MMCE) - Hoot Innut	Capacity (MM/ID+/h	r) v 8 760 broker v 1	MMACE/1 020	ı							
	Emission Factors from	•		•									
	(AP-42 Supplement D	· ·	10000 1.4-1, 1.4-2	, and 1.4-5, 500 #1	-01-000-01, 1	-							
	Emission (tons/yr) = Th		v Emission Factor	(Ib/MMCE)/2 000 Ib									
36		noughput (MMCF/yl)	V FILISSION LACIO	(ID/IVIIVICIT)/2,000 ID									
1 20													

	А ВС	D	E	F	G	Н	I	J	К
37			Appendix	A: Emission Ca	lculations				Page 13 of 23 ATSD App
38			Natura	al Gas Combustic	n Only				
39				MMBTU/HR >100)				
40				Utility Boiler					
41			Company Name:						
42			Address:	7 Ridge Avenue,	Lawrenceburg	g, Indiana 470)25		
43		Part 70 Opera	ting Permit No.:	T029-32119-0000					
44				Teresa Freeman	/ Kristen Willo	ughby			
45			Date:	May 22, 2014					
46									
47		gracecoccoccoccoccoccoccoccoccoccoccoccocco	***************************************	***************************************	***************************************		1		
48				s - Organics	30,000,000,000,000,000,000,000,000,000,	000000000000000000000000000000000000000			
49		Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene			
	Emission Factor in lb/	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03			
51									
52	5								
	Potential Emission in	2.20E-03	1.26E-03	7.86E-02	1.89E+00	3.56E-03			
54									
55			A.I.I.	De Matele	***************************************	***************************************	ı		
56		c c		Ps - Metals		k.1* 1 1			
57	Emission Factor in lb/	Lead	Cadmium	Chromium	Manganese	Nickel			
58 59	Emission Factor in ib/	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03			
60									
	Potential Emission in	5.24E-04	1.15E-03	1.47E-03	3.98E-04	2.20E-03			
62	i otentiai Eniission III	3.24E-04	1.15E-03	1.47 E-03	3.80E-04	Z.ZUE-U3			
63		<u> </u>		<u> </u>	Total HAPs	1.98			
64					Worst HAP	1.89			
65	The five highest organic	and metal HAPs a	mission factors are n	rovided above	AAOISCIIME	1.03	l		
	Additional HAPs emissi								
67	, waltional in 3 onlissi	on ractors are avair	abio iii / ii · +z, Oliapii	OI 1.T.					
57									

	А ВС	D	E	F	G	Н	I	J	K				
68			Appendia	A: Emission Cal	culations				Page 14 of 23 ATSD App A				
69			Natura	al Gas Combustio	n Only								
70				MMBTU/HR >100									
71		Utility Boiler											
72			Company Name:	MGPI of Indiana,	LLC								
73			Address:	7 Ridge Avenue,	Lawrenceburg	g, Indiana 47	025						
74		Part 70 Operati	ng Permit No.:	T029-32119-0000	5								
75			Reviewer:	Teresa Freeman	Kristen Willo	oughby							
76			Date:	May 22, 2014									
77													
78			Greenhouse Gas										
79		CO2	CH4	N2O									
-	Emission Factor in lb/	120,000	2.3	2.2									
81													
82													
	Potential Emission in	125,732	2.4	2.3									
84													
85													
	Summed Potential Emis	sions in tons/yr	125,736										
87													
88	CO2a Tatal in tana (r h	an ad an 11/20/2012	106 470										
	CO2e Total in tons/yr ba federal GWPs	1500 011 11/29/2013	126,479										
91	lederal GVVFS												
	CO2e Total in tons/yr ba	l ased on 10/30/2009	126,497										
	federal GWPs		120,401										
94	Todorar OVVI o												
	Methodology												
	The N2O Emission Factor	for uncontrolled is 2.2	2. The N2O Emission	n Factor for low Nox b	ourner is 0.64.								
	Emission Factors are from					06-03.							
ļI	Global Warming Potential				•								
	Emission (tons/yr) = Thro	` ,		•									
	CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential												
101	CO2e (tons/yr) based on	10/30/2009 federal GV	WPs = CO2 Potential	Emission ton/yr x CC	02 GWP (1) + C	H4 Potential							

	A B	С	D	E	F	G	Н	I	J
1				Appendix	A: Emission Ca	Iculations			Page 15 of 23 ATSD App A
2				Natura	al Gas Combustic	on Only			
3					MMBTU/HR >100)			
4					Utility Boiler				
5									
6					MGPI of Indiana,				
7					7 Ridge Avenue,		ırg, Indiana 47	7025	
8			Part 70 Opera	-	T029-32119-0000				
9 10					Teresa Freeman	/ Kristen Wil	loughby		
11				Date:	May 22, 2014				
12									
ļ	Heat Input Capacity	нн\/	Potential Throu	ahnut					
14	MMBtu/hr	mmBtu	MMCF/yr	911691					
15	WilVIDta/III	mmscf	· Wilvioi /yi						
16	47.6	1020	408.8						
17	1,.0		100.0						
18									
19	Unrecognized Fuel C	Dil usage	HHV		Potential Through	put			
	Heat Input Capacity		mmBtu		MMCF/yr	•			
21	MMBtu/yr		mmscf	•	•				
22	140736.0		1020		138.0				
23									
24									
25						Pollutant			
26			PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
27	Emission Factor in II	b/MMCF	1.9	7.6	7.6	0.6	100	5.5	84
28							**see below		
29									
	Potential Emission in	^	0.39	1.55	1.55	0.12	20.4	1.12	17.2
31									
	Potential Emissions		0.13	0.52	0.52	0.04	6.90	0.38	5.80
	Fuel Oil consumption		- 1 - DDA 1 - DD	140	- '- CH) M (() - -		
34	*PM emission factor		•			ondensable P	vivi10 combine		
	PM2.5 emission fact					Durnara/El	aga nasinawisi		
36	**Emission Factors t	OF NOX:	Oncontrolled =	IOU, LOW NOX BUI	ilei = 50, LOW NOX	. Durners/Fiue	gas recirculat		
37	Nathardal								
38	Methodology								

	А	В	С	D	Е	F	G	Н	I	J		
39												
40	All emission facto	rs a	re base	d on normal firir								
41	MMBtu = 1,000,0	00 I										
42	MMCF = 1,000,000 Cubic Fee											
43	Emission Factors	are	from Al	⊃ 42, Chapter 1.	4, Tables 1.4-1, 1.	4-2, 1.4-3, SCC #1	l-02-006-02, <mark>1</mark>	-01-006-02, 1	-03-006-02, and 1-	-(
44	Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020											
45	Emission (tons/yr) = 1	Γhrough	put (MMCF/yr)	Emission Factor	(lb/MMCF)/2,000 lb	D .					

	А	В	С	D	E	F	G	Н	l	j
46				-			-			
47					Appendix	A: Emission Ca	lculations			Page 16 of 23 ATSD App A
48					Natura	ıl Gas Combustio	n Only			
49						MMBTU/HR >100	l			
50						Utility Boiler				
51										
52					Company Name:	MGPI of Indiana,	LLC			
53					Address:	7 Ridge Avenue,	Lawrencebu	rg, Indiana 47	7025	
54				Part 70 Opera	iting Permit No.:	T029-32119-0000	5			
55					Reviewer:	Teresa Freeman	/ Kristen Will	loughby		
56					Date:	May 22, 2014				
57										
	HAPS Calculation	<u>ons</u>								
59				***************************************			***************************************	***************************************	***************************************	,
60					<u></u>	HAPs - Org				
61				Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics	
	Emission Factor	in It		2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03		
63										
64										
	Potential Emission	on ir		4.292E-04	2.453E-04	1.533E-02	3.679E-01	6.950E-04	3.846E-01	
66							<u> </u>			
67				8						,
68						HAPs - Me				
69	pos pos ,			Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals	
	Emission Factor	ın It		5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03		
71										
72	Detential Emissis	.n !-		4 000= 04	2 240 = 24	0.000= 0.4	7 7075 05	4 2025 04	4 400= 00	
	Potential Emission	או ווי		1.022E-04	2.248E-04	2.862E-04	7.767E-05	4.292E-04	1.120E-03	
74					l				A A ### A 4	
75	Bantle - del 111	L		_				Total HAPs	3.857E-01	
	Methodology is the	ne sa	me as a	ξ				Worst HAP	3.679E-01	
77	The control of the control of				tantan fantan	and daylor barre				
	-				ission factors are p					
	Additional HAPs	emis	sion tac	ctors are availab	le in AP-42, Chapte					
80										

	Α	В	С	D	E	F	G	Н	I	J
81		· · · · · · · · · · · · · · · · · · ·			Appendi	x A: Emission Cal	culations	I		Page 17 of 23 ATSD App A
82					Natui	al Gas Combustio	n Only			
83						MMBTU/HR >100				
84						Utility Boiler				
85										
86				•	Company Name:	MGPI of Indiana,	LLC			
87					Address:	7 Ridge Avenue,	Lawrencebu	rg, Indiana 47	025	
88				Part 70 Opera	ting Permit No.:	T029-32119-0000	5			
89					Reviewer:	Teresa Freeman	/ Kristen Will	loughby		
90					Date	: May 22, 2014				
91										
92	Greenhouse Gas	<u>Calcı</u>	<u>ılatio</u>	<u>ns</u>						
93										
94					Greenhouse Ga	as				
95				CO2	CH4	N2O				
96	Emission Factor in	lk		120,000	2.3	2.2				
97										
98										
99	Potential Emission	ir		24,528	0.5	0.4				
100										
101										
	Summed Potential	Emis	sions '	in tons/yr	24,529					
103										
104	000- T-1-1-1	(- 1		- 44 (00 (0040	04.074					
	CO2e Total in tons	/yr ba	ısea o	on 11/29/2013	24,674					
	federal GWPs									
107	CO20 Total in tona	hir ha	 	n 10/20/2000	24,677					
	CO2e Total in tons federal GWPs	/yi ba	iseu u	111 10/30/2009	24,011					
$\frac{109}{110}$										
	Methodology									
		actor f	ar uno	ontrolled is 2.2 TI	ha N20 Emission Er	actor for low Nox burne	r is 0.64			
						-006-02, 1-03-006-02,)3		
	Global Warming Pote						a, a 1 00-000-0			
	Emission (tons/yr) = 7					•				
	` • ′	_		• ,	•	ission ton/yr x CO2 GV	VP (1) + CH4 P	otential		
						nission ton/yr x CO2 GV				

	Α	В	С	D	E	F	G	Н	ı	J	K
1				Appendix A:	Emissions Ca	alculations		1		l	Page 18 of 23 ATSD App A
2			Commercial/In	stitutional/Re	sidential Com	bustors (< 100 mmBtu/hr)					
3					#1 and #2 Fu	el Oil					
4											
5			Cor	npany Name:	MGPI of India	ana, LLC					
6				Address:	7 Ridge Aver	nue, Lawrenceburg, Indiana 47025					
7		F	Part 70 Operatin	g Permit No.:	T029-32119-	00005					
8				Reviewer:	Teresa Freer	nan / Kristen Willoughby					
9				Date	: May 22, 2014						
10											
ļ	Heat Input	Capacity	Potential Through	ghput	Limited Throu	ghput			S = W	, -	
L	MMBtu/hr		kgals/year		kgals/yr				0.3		
13	_										
14	45.6		2853.3		1848						
15											
L	Unrecogniz			Unrecognized							
	Fuel Oil usa	=		Heat Input Ca	apacity						
19	(kgals/year) 1005.3			MMBtu/yr 140736.0							
20	1000.0			140730.0							
21											
22							Pollutant				
23				PM*	PM10	direct PM2.5	SO2	NOx	VOC	СО	
	Fmission F	actor in lb/kgal		2.0	2.3	1.55	42.6	20.0	0.20	5.0	
25		aoto, III Ibrilgai		2.0	2.0	1.33	(142.0S)	20.0	0.20	0.0	
26							(, , _ , , ,				
	Potential Er	nission in tons/yr		2.85	3.28	2.21	60.8	28.5	0.29	7.1	
 		issions from fuel oil	in tons/yr	1.85	2.13	1.43	39.4	18.5	0.185	1 1	
29			<u> </u>			1	1	1			
\vdash	Methodolo	gy									
31											
32	1 gallon of	No. 2 Fuel Oil has a	heating value of	140,000 Btu							
33											
34	Potential Th	roughput (kgals/ye	ar) = Heat Input (Capacity (MME	3tu/hr) x 8,760	hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu					
35											
-						1-02-005-01/02/03) Supplement E 9/98 (see erata file)					
37		on factor is filterable	•			-					
	Emission (t	ons/yr) = Throughp	ut (kgals/ yr) x Er	nission Factor	(lb/kgal)/2,000	lb/ton					
39											
40											
41											

	А	В	С	D	Е	F	G	Н		J	K
42				Appendix A:	Emissions Ca	alculations		•			Page 19 of 23 ATSD App A
43			Commercial/Ir	nstitutional/Re	sidential Com	bustors (< 100 mmBtu/hr)					
44					#1 and #2 Fu	el Oil					
45											
46				Co		MGPI of Indiana, LLC					
47			_			7 Ridge Avenue, Lawrenceburg, Indiana 47025					
48			Pa	art 70 Operatir	_	T029-32119-00005					
49						Teresa Freeman / Kristen Willoughby					
50 51					Date:	May 22, 2014					
51						LIAD- M-t-I-			ı		
				<u> </u>	T 5	HAPs - Metals	T 01 :				
53	F	Santani'a II. (an an Di		Arsenic	Beryllium	Cadmium	Chromium	Lead			
	Emission F	actor in lb/mmBtu		4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06			
55 56											
	Dotontial E	mission in tons/yr		7.99E-04	5.99E-04	5.99E-04	5.99E-04	1.80E-03			
58	i otentiai L	illission in tons/yi		7.992-04	3.992-04	3.592-04	3.992-04	1.002-03			
59								<u> </u>			
60						HAPs - Metals (continued)		1			
61				Mercury	Manganese	Nickel	Selenium	-			
	Emission F	actor in lb/mmBtu		3.0E-06	6.0E-06	3.0E-06	1.5E-05				
63											
64								Total			
65	Potential E	mission in tons/yr		5.99E-04	1.20E-03	5.99E-04	3.00E-03	9.8E-03			
66											
67				•			•	_			
68	Methodolo	gy									
69											
		s available in AP-42	•								
	Potential E	missions (tons/year) = Throughput (mmBtu/hr)*Em	ission Factor (I	b/mmBtu)*8,760 hrs/yr / 2,000 lb/ton					
72											

	Α	В	С	D	Е	F	G	Н	ı	J	К
73		1		Appendix A:	Emissions Ca	alculations					Page 20 of 23 ATSD App A
74			Commercial/Ins	stitutional/Res	idential Com	bustors (< 100 mmBtu/hr)					
75					#1 and #2 Fu						
76						Greenhouse Gas Emissions					
75 76 77											
78 79 80			Con	mpany Name:	MGPI of India	ana, LLC					
79				Address:	7 Ridge Aver	nue, Lawrenceburg, Indiana 47025					
80		F	Part 70 Operatin	g Permit No.:	T029-32119-	00005					
81			•	_		man / Kristen Willoughby					
82				Date:	May 22, 2014	.					
83											
84						Greenhouse Gas					
85				CO2	CH4	N2O					
	Emission F	actor in lb/kgal		22,300	0.052	0.26					
87		· ·									
88											
89	Potential Er	mission in tons/yr		31,814	0.1	0.4					
90		•									
91											
92	Summed P	otential Emissions i	n tons/yr		31,814						
93			•								
94											
95	CO2e Total	l in tons/yr based on	11/29/2013		31,926						
96	federal GW	'Ps									
97											
98	CO2e Total	l in tons/yr based on	10/30/2009		31,930						
99	federal GW	'Ps									
100											
101	Methodology	,									
102	The CO2 Emis	ssion Factor for #1 Fuel	Oil is 21500. The CO	02 Emission Factor	r for #2 Fuel Oil is	22300.					
103	Emission Fact	ors are from AP 42, Tab	les 1.3-3, 1.3-8, and	1.3-12 (SCC 1-02-	005-01/02/03) Su	pplement E 9/99 (see erata file)					
104	Global Warmir	ng Potentials (GWP) from	m Table A-1 of 40 CF	FR Part 98 Subpart	t A.						
		s/yr) = Throughput (kgal									
						/P (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potentia					
107	CO2e (tons/yr) based on 10/30/2009 f	ederal GWPs = CO2	Potential Emission	n ton/yr x CO2 GV	VP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potentia	al Emission ton/	yr x N2O GV	VP		

	A B	С	n	F.	F	G	Н	
1	7 5		Appendix	x A: Emission Ca	lculations			1 1 1 3
2		ı	Large Reciprocating In			esel Fuel		
3			-	tput Rating (>600	-			
4				Input Rate (>4.2				
5								
6			Company Name:	MGPI of Indiana	, LLC			
7			Address City IN Zip:	7 Ridge Avenue	, Lawrenceburg	յ, Indiana 47025	;	
8			Permit Number:	T029-32119-0000)5			
9			Reviewer:	Teresa Freeman	/ Kristen Willo	ughby		
10			Date:	May 22, 2014				
11								
	B. Emissions calculated base	d on output rating (hp)						
13		0 (-11)	4000.0	7				
14		Output Horsepower Rating (hp)	1600.0					
15 16		Maximum Hours Operated per Year	500 800,000	-				
17		Potential Throughput (hp-hr/yr) Sulfur Content (S) of Fuel (% by weight)	0.500	-				
18		Sandi Sometic (S) of Fuel (76 by Weight)	0.000					
19					Pollutant			
20		PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	СО
_	Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-03	2.40E-02	7.05E-04	5.50E-03
22	·				(.00809S)	**see below		
23	Potential Emission in tons/yr	0.28	0.16	0.16	1.62	9.60	0.28	2.20
		was calculated using the emission factor in II	b/MMBtu and a brake sp	ecific fuel consum	ption of 7,000 Bt	u / hp-hr (AP-		_
-	42 Table 3.3-1).							
	**NOx emission factor: uncontrol	led = 0.024 lb/hp-hr, controlled by ignition tim	ing retard = 0.013 lb/hp-	hr				
27								
-	Hazardous Air Pollutants (HAP	S) 			D.U. t			
29				T	Pollutant			Total PAH
30 31		Benzene	Toluene	Xylene	 Formaldehyde	Acetaldehyde	Acrolein	HAPs***
	Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
	Potential Emission in tons/yr	2.17E-03	7.87E-04	5.40E-04	2.21E-04	7.06E-05	2.21E-05	5.94E-04
		oon (PAHs are considered HAPs, since they						1 212 12 21
		ere calculated using emission factors in lb/MM			n of 7,000 Btu / h	p-hr (AP-42		
36	Table 3.3-1).	•	·	·				
37								
38							Potential Emission of Total HAPs (tons/yr)	4.41E-03
39	Green House Gas Emissions (GHG)			7			
40			Pollutan	<u>t</u>	_			
41								
42	Facilities Facilities B. #	CO2	CH4	N2O	-			
	Emission Factor in lb/hp-hr	1.15E+00	4.62E-05	9.24E-06	-			
	Potential Emission in tons/yr	4.60E+02	1.85E-02	3.70E-03	1			
45 46						1	Summed Potential Emissions in tons/yr	4.60E+02
47							CO2e Total in tons/yr based on 11/29/2013 federal GWPs	
47							CO2e Total in tons/yr based on 11/29/2013 federal GWPs	
48							COZE TOTAL III TOIIS/YL DASEU OII 10/30/2003 IEUETAI GWPS	4.02ETUZ
	Emission Factors are from AD 42	(Supplement B 10/96) Tables 3.4-1, 3.4-2, 3	.4-3 and 3.4-4					
		om 40 CFR 98 Subpart C Table C-2.	.+:o, and 0.4-4.					
		P) from Table A-1 of 40 CFR Part 98 Subpart A	Δ.					
	(OVI	, a.z.z						

	Α	В	С	D	Е	F	G	Н	I	J
53	Potential Thr	oughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum	Hours Operated per Y	ear]					

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]

CO2e (tons/yr) based on 11/29/2013 federal GWPs = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (310).

CO2e (tons/yr) based on 10/30/2009 federal GWPs = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Page 21 of 23 ATSD App A 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 50 51 52		К	L
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	1		I
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	4		
6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	5		
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	6		
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 50 51			
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	·		
20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	·		
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51			
37 38 39 40 41 42 43 44 45 46 47 48 49 50			
38 39 40 41 42 43 44 45 46 47 48 49 50 51	 		
39 40 41 42 43 44 45 46 47 48 49 50			
40 41 42 43 44 45 46 47 48 49 50	 		
41 42 43 44 45 46 47 48 49 50 51			
42 43 44 45 46 47 48 49 50			
43 44 45 46 47 48 49 50			
44 45 46 47 48 49 50			
45 46 47 48 49 50 51			
46 47 48 49 50			
47 48 49 50 51			
48 49 50 51			
49 50 51			
50 51			
51			
52			
	52		

	K	L
53		
54		
55		
56		

A	В	С	D	F	F	G	Н	1	Т	1	Тк	
1				A: Emission C	alculations	<u>_</u>					1 1	Page 22 of 23 ATSD App
2		Recip	rocating Interna			atural Gas						
3				ean-Burn (2SL								
4				,	_, J							
5		Co	ompany Name:	MGPI of India	na. LLC							
6						eburg, Indiana 47025						
7			ermit Number:			ebuig, malana 47 020						
8				Teresa Freem		Willoughby						
9				May 22, 2014		······································						
10			Date	ay 22, 2011								
11		Maximum Heat Input Capacity (MMBtu/hr)	0.121	1								
12		Maximum Hours Operated per Year (hr/yr)	500									
 13		Potential Fuel Usage (MMBtu/yr)	60.5									
14		High Heat Value (MMBtu/MMscf)	1020									
.5		Potential Fuel Usage (MMcf/yr)	0.06	1								
.6				J								
17				Pollutant				7				
l8 Criteria Pollutants	PM*	PM10*	PM2.5*	SO2	NOx	VOC	СО	1				
19 Emission Factor (lb/MMBtu)	3.84E-02	4.83E-02	4.83E-02	5.88E-04	3.17E+00	1.20E-01	3.86E-0	il .				
20 Potential Emissions (tons/yr)	0.001	0.001	0.001	1.78E-05	0.10	0.004	0.01					
		110 emission factor is filterable PM10 + conden		1			1 2.0.	_				
PM2.5 emission factor is filtera												
23												
24 Hazardous Air Pollutants (HAP	s)											
(Emission		[
	Factor											
Pollutant	(lb/MMBtu)	Potential Emissions (tons/yr)										
26 Acetaldehyde	7.76E-03	2.35E-04										
27 Acrolein	7.78E-03	2.35E-04										
28 Benzene	1.94E-03	5.87E-05										
29 1,3-Butadiene	8.20E-04	2.48E-05										
30 Ethylbenzene	1.08E-04	3.27E-06										
Formaldehyde	5.52E-02	1.67E-03										
Methanol	2.48E-03	7.50E-05										
Methylene Chloride	1.47E-04	4.45E-06										
Hexane	4.45E-04	1.35E-05										
Toluene	9.63E-04	2.91E-05										
36 2,2,4-Trimethylpentane	8.46E-04	2.56E-05										
Total PAH**	1.34E-04	4.05E-06										
38	Total	2.38E-03										
39												
	oon (PAHs are	e considered HAPs, since they are considered P	Polycyclic Organi	ic Matter)								
41												
Methodology												
Emission Factors are from AP-4												
	_	Heat Input Capacity (MMBtu/hr)] * [Maximum Ho										
	otential Fuel I	Usage (MMBtu/yr)] * [Emission Factor (lb/MMBt	u)] / [2000 lb/ton	ıJ								
46		ı			<u>o</u> ,							
47		}		house Gas (GH								
48 Greenhouse Gases (GHGs)			CO2	CH4	N20							
Emission Factor in lb/MMBtu*			110	1.25	0.0							
50 Emission Factor in Ib/MMcf**					2.2							
51 Potential Emission in tons/yr			3.33	0.04	0.00							
52												
53 Summed Potential Emissions in	tons/yr			3.37								
54												

	A	В	С	D	E	F	G	Н	I	J	K	L
55												
56	CO2e Total in tons/yr based on	11/29/2013			4.29							
57 1	federal GWPs											
58												
59 (CO2e Total in tons/yr based on	10/30/2009		4.14								
60 1	federal GWPs											
61												
62	Methodology											
63	The CO2 and CH4 emission factor	s are from Emis	ssion Factors are from AP-42 (Supplement F, July 20	00), Table 3.2-2								
64	**The N2O emission factor is from	AP 42, Table 1.4	4-2. The N2O Emission Factor for uncontrolled is 2.2	2. The N2O Emission	on Factor for low	Nox burner is	s 0.64.					
65	Global Warming Potentials (GWP) f	rom Table A-1 o	of 40 CFR Part 98 Subpart A.									
66	For CO2 and CH4: Emission (tons/	yr) = [Potential l	Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu	u)] / [2,000 lb/ton]								
}i		_	e (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000	-								
			s= CO2 Potential Emission ton/yr x CO2 GWP (1) + 0		-							
69	CO2e (tons/yr) based on 10/30/200	9 federal GWPs	s= CO2 Potential Emission ton/yr x CO2 GWP (1) + 0	CH4 Potential Emis	sion ton/yr x CH4	GWP (21) +	N2O Potential Emission ton/yr x N2O G	WP (310).				
70												
71	Abbreviations											
72 F	PM = Particulate Matter		NOx = Nitrous Oxides				CO2 = Cabon Dioxide					
73 F	PM10 = Particulate Matter (<10 um)	VOC - Volatile Organic Compounds				CH4 = Methane						
74	SO2 = Sulfur Dioxide		CO = Carbon Monoxide	!			N2O = Nitrous Oxide					
75							CO2e = CO2 equivalent emissions					

$\overline{}$	Λ Ι	D	C	D	г	Г г		11		
1	Α	В	С	D	A: Emission C		G	Н		
2	Appendix A: Emission Calculations									
3	Reciprocating Internal Combustion Engines - Diesel Fuel									
4	Output Rating (<=600 HP)									
-	Maximum Input Rate (<=4.2 MMBtu/hr)									
5					MODI CI II					
6	Company Name: MGPI of Indiana, LLC									
7							1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
8										
9						Teresa Freeman / Kristen Willoughby				
10				Date:	May 22, 2014					
11										
	B. Emissio	ns calculated base	d on output rating (hp)							
13			Output Harsanowar Pating (hp)	235.0	1					
14 15			Output Horsepower Rating (hp) Maximum Hours Operated per Year	500	-					
16			Potential Throughput (hp-hr/yr)	117,500						
17			Sulfur Content (S) of Fuel (% by weight)	0.500						
18		-			_	Pollutant				
19 20										
-	Facility is a Fa	at and in the flow has	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC		
	Emission Fa	ctor in lb/hp-hr	2.20E-03	2.20E-03	2.20E-03	2.05E-03	3.10E-02	2.51E-03		
22	Potential Em	nission in tons/yr	0.13	0.13	0.13	0.12	1.82	0.15		
24	*PM10 emis	sion factor in lb/hp-h	r was calculated using the emission factor in II					0.10		
	42 Table 3.3									
-	**NOx emiss	sion factor: uncontro	olled = 0.024 lb/hp-hr, controlled by ignition tim	ing retard = 0.013 lb/hp-h	nr					
27		At Dalletonte (HAD	N. 1							
	Hazardous	Air Pollutants (HAF 	?s) [Pollutant				
30						Foliutant				
31			Benzene	Toluene	Xylene	1.3-Butadiene	Formaldehyde	Acetaldehyde		
	Emission Fa	ctor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06		
-		ission in tons/yr	3.84E-04	1.68E-04	1.17E-04	1.61E-05	4.85E-04	3.15E-04		
34	***PAH = Po	lyaromatic Hydrocar	rbon (PAHs are considered HAPs, since they	are considered Polycyclic	Organic Matter)	2				
			vere calculated using emission factors in lb/MN	/IBtu and a brake specific	fuel consumption	n of 7,000 Btu /	hp-hr (AP-42			
	Table 3.3-1)									
37 38								Potential Emission of Total HADs (tars for		
	Green Hous	se Gas Emissions (GHG)					Potential Emission of Total HAPs (tons/yr)		
40		2 240 20010110 (,	Pollutant	<u> </u>	1				
41						1				
42			CO2	CH4	N2O					
43	Emission Fa	ctor in lb/hp-hr	1.15E+00	4.62E-05	9.24E-06]				
44	Potential Em	ission in tons/yr	6.76E+01	2.71E-03	5.43E-04					
45										
46								Summed Potential Emissions in tons/yr		
47										
48										
49										

	Α	В	C		D	E	F		G		Н	
50	50 Methodology											
51	51 Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2											
52	52 CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.											
53	Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.											
54	Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]											
55	Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]											
56	CO2e (tons/yr) based on 11/29/2013 federal GWPs= CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).											
57	CO2e (tons/vr) based on 10/30/2009 federal GWPs = CO2 Potential Emission ton/vr x CO2 GWP (1) + CH4 Potential Emission ton/vr x CH4 GWP (21) + N2O Potential Emission ton/vr x N2O GWP (310).											

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1		Page 23 of 23 ATSD App A
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11		
12 13		
14		
15		
16		
17		
18		
19		
20	CO	
21	6.68E-03	
22	0.00	
23 24	0.39	
25		
26		
27		
28		
29		
30		Total PAH
31	Acrolein	HAPs***
32 33	6.48E-07 3.80E-05	1.18E-06 6.91E-05
34	3.60L-03	0.812-03
35		
36		
37		
38	1.59E-03	
39		
40		
41 42		
42		
		
44 45		
45	6.76E+01	
47	CO2e Total in tons/yr based on 11/29/2013 federal GWPs	6.78E+01
48	CO2e Total in tons/yr based on 10/30/2009 federal GWPs	6.78E+01
49	5026 Total III tolis/yi based oli 10/30/2009 ledetal GWFS	U./ULTUI

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